The ball, the earth and the moon are portions of matter, one of the fundamental entities, or primary concepts (defining concept as that of which the mind thinks, and not an action of the mind). Gravitational attraction, a force, whether a push or a pull, is also a fundamental entity. Energy, velocity, work, etc., are complex concepts, or mathematical expressions, involving two or more simple concepts, such as, matter, space, time and force, besides the concepts of condition, such as direction, relative position and availability. The potential energy of the ball on the shelf is not merely five foot-pounds, it is five foot-pounds relative to the position of the floor, and it is not available until it is rolled off the shelf.

Consider a one-pound ball held in the hand five feet above the floor of a railroad car which is traveling eastward at the rate of 32 feet per second. It has 5 foot-pounds of potential energy and zero kinetic energy relative to the floor of the car, and $\frac{1}{2}MV^2 \equiv 16$ foot-pounds of kinetic energy relative to the earth. If it is thrown westward at the same velocity that the car is moving eastward, it has zero velocity and zero kinetic energy relative to the earth, but 16 foot-pounds of kinetic energy relative to the car, and it is capable of breaking the window in the door of the car if thrown against it.

If Dr. Brush's kinetic theory of gravitation depends on the hypothesis that the potential energy of a body raised from the earth's surface and held by the attraction of the moon (or of a magnet) disappears entirely and becomes resident in the ether, it is not likely to meet with acceptance.

There seems to be another weak point in his theory, viz., he assumes that the long radiant waves of ether, the hypothetical cause of gravitation, "pass freely through all bodies," and yet that they cast a "shadow." These two ideas seem to be inconsistent. A perfectly transparent glass plate casts no shadow of light when rays of light pass freely through it.

WILLIAM KENT

MONTCLAIR, N. J.,
April 3, 1911

WHAT IS THE GENOTYPE OF X-US JONES, 1900, BASED UPON A SPECIES ERRONEOUSLY DETERMINED AS ALBUS SMITH, 1890?

Statement of Case.—Jones proposes the new genus *X-us,* 1900, type species *albus* Smith, 1890.

It later develops that *albus* Smith, 1890, as determined by Jones, 1900, is an erroneous determination.

What is the genotype of *X-us,* 1900; *albus* Smith, 1890, or the form erroneously identified by Jones as *albus* in 1900?

Discussion.—The nomenclatorial problem expressed in the caption of this note is solved in two diametrically opposite ways by different authors.

Some writers maintain that the original *albus* Smith, 1890, is the genotype, while others maintain that the genotype is represented by the species actually studied by Jones and misdetermined as *albus* Smith.

Cases of this general nature have given rise to considerable confusion in nomenclature, and several such cases have been referred to the International Commission on Nomenclature for opinion.

At the last meeting of the commission, the principles involved came up for discussion, but it was impossible to reach a unanimous agreement. On account of the differences of opinion, the secretary was instructed to make a careful study of a number of cases, and to report upon the same to the commission.

It is not difficult to foresee that no matter how the cases are finally decided, great dissatisfaction will arise among zoologists because the opinion rendered is not the direct opposite of what it eventually will be.

Recognizing that this is one of the most difficult cases that has ever been submitted to the commission, and recognizing the fact that regardless of our action we shall probably be criticized more on basis of our decision on this case than because of any other opinion that we have rendered, I am desirous of studying at least one hundred cases if possible, that

would come under such a ruling, before my report is formulated.

In view of the foregoing premises, I respectfully request zoologists in different groups to call my attention to as many instances of this kind as possible, with which they are acquainted in their different specialties. Further, since the arguments on both sides of the problem appear to be almost equally valid, it does not seem impossible that the final decision will have to be based upon an arbitrary choice between the two possible rulings, and on this account I am desirous of obtaining all possible arguments on both sides as they occur to different zoologists, and also any personal views based upon convenience or inconvenience, or other grounds, which may be held by different colleagues.

I will hold the case open at least until September 1, for the presentation of arguments by any persons who may desire to submit their views.

C. W. STILES,
Secretary of the Commission

April 4, 1911

SCIENTIFIC BOOKS

Diseases of Economic Plants. By F. L. STEVENS, Ph.D., and J. G. HALL, M.A. New York, The Macmillan Co. 1910. Pp. 313, 214 figures. $2.00 net.

The authors of this work have sought to produce a book on plant pathology "for those who wish to recognize and treat diseases without the burden of long study as to their causes." To this end "technical discussion is avoided in so far as is possible," and "no consideration is given to the causal organism except as it is conspicuous enough to be of service in diagnosis, or exhibits peculiarities, knowledge of which may be of use in prophylaxis." Non-parasitic diseases are omitted, except a few of the most conspicuous.

The volume opens with short chapters on the history of plant pathology, the damage done by plant diseases, their symptoms, prevention or cure, public plant sanitation, fungicides, spraying machinery, cost of spraying, profits from spraying, soil disinfection and general diseases.

The greater part is given to brief descriptions of plant diseases due to bacteria or fungi with suggestions regarding their prevention or cure. For this purpose a grouping by hosts is adopted; viz., pomaceous fruits, drupaceous fruits, small fruits, tropical fruits, vegetable and field crops, cereals, forage crops, trees and timber and ornamental plants. This is a commendable feature for a practical reference book as some such classification is much to be preferred to an arrangement according to the botanical relationship of the parasite.

To present in a popular way a highly technical subject and to retain accuracy and thoroughness is a much harder task than writing for professional readers. Diverse opinion exists as to the most effective method of presenting such a subject. It is, therefore, to be expected that many readers will differ with our authors. Their attention will first be arrested by the general use of *ose* as an ending for the generic name of the causal fungus to form a common name for the disease. Decay due to blue mold becomes "penicilliose"; dry rot of sweet potatoes, "lasiodiplodiose"; wilt of cotton, "fusariose," etc. There are many arguments against such names, and it does not seem wise to attempt to introduce them into a popular book before they have been accepted by plant pathologists.

Some readers will not approve the omission of all technical details relating to the nature and life history of fungi, holding them to be as essential to pathology as mathematics to a treatise on engineering. The short chapter on fungi in the appendix is not adequate nor is it correlated with the chapter on pathology.

It is to be regretted that it was found necessary to limit the book to diseases due to fungi and bacteria, especially since the causes of diseases are not given prominence in the text. The lay reader will be confused by the omission of the physiological fruit spot of the apple, while the similar but less important fungus fruit spot is discussed. Potato tipburn is given four lines while the no more important potato scab is allotted four pages of text. The wilt and dieback of the orange are omitted as is the curly top of beet, one of the